DRIVE AXLE ASSEMBLE AND DIFFERENTIAL

Inventor: Yakov Fleytman

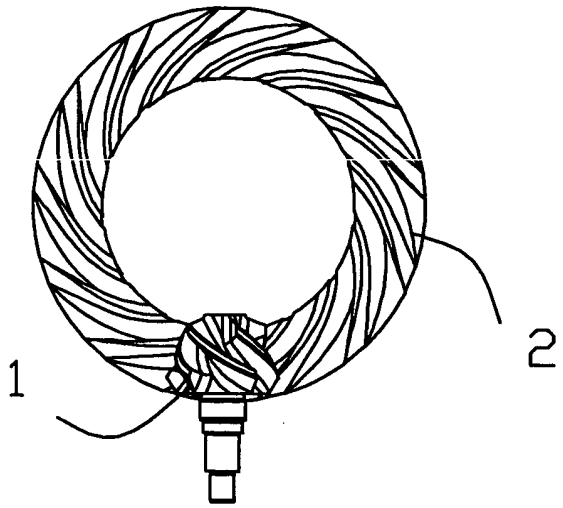

FIG 1

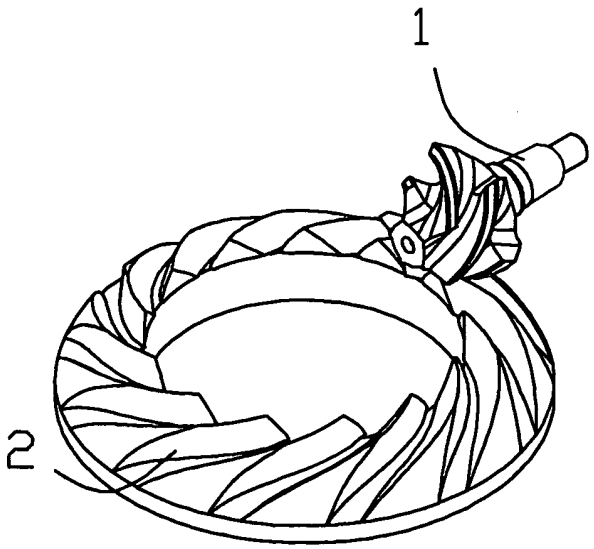

FIG 2

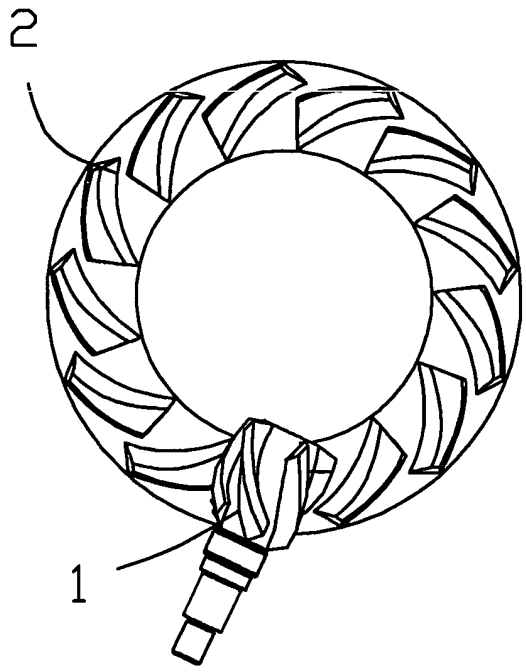

FIG 3

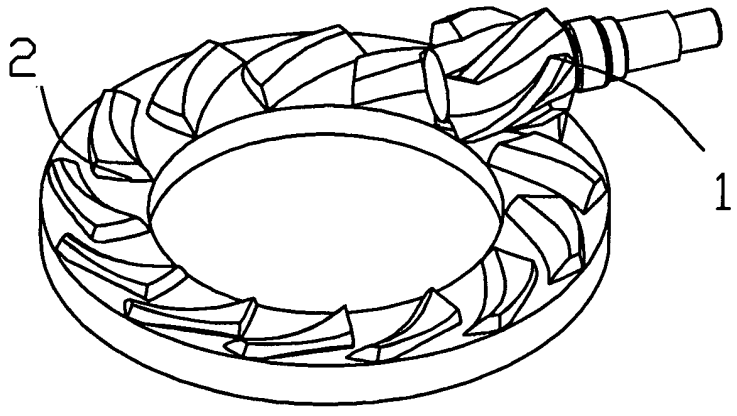

FIG 4

DRIVE AXLE ASSEMBLE AND DIFFERENTIAL
Inventor: Yakov Fl ytman

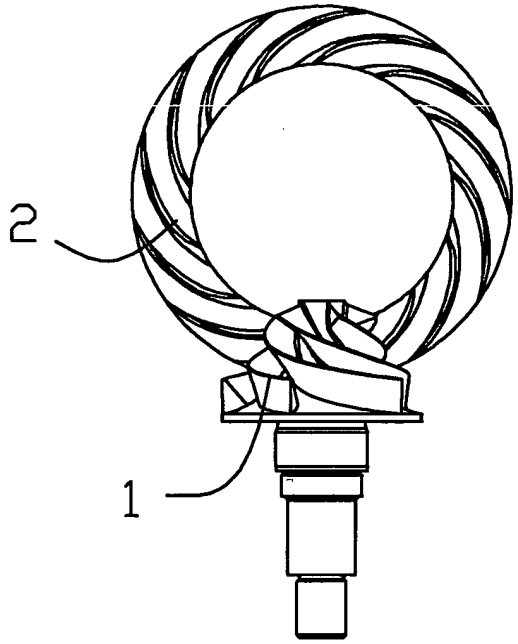

FIG 5

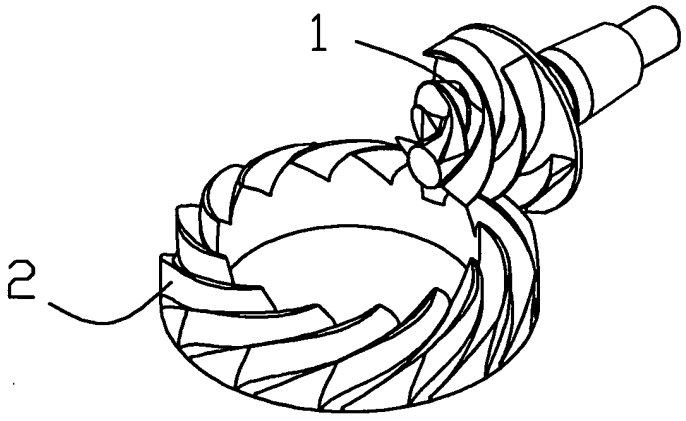

FIG 6

DRIVE AXLE ASSEMBLE AND DIFFERENTIAL

Inventor: Yakov Fleytman

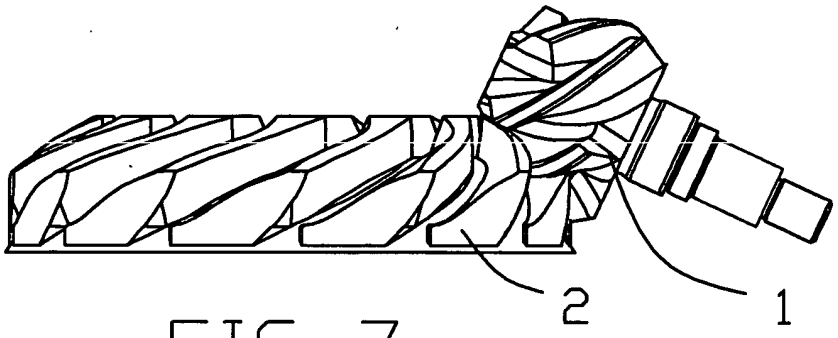

FIG 7

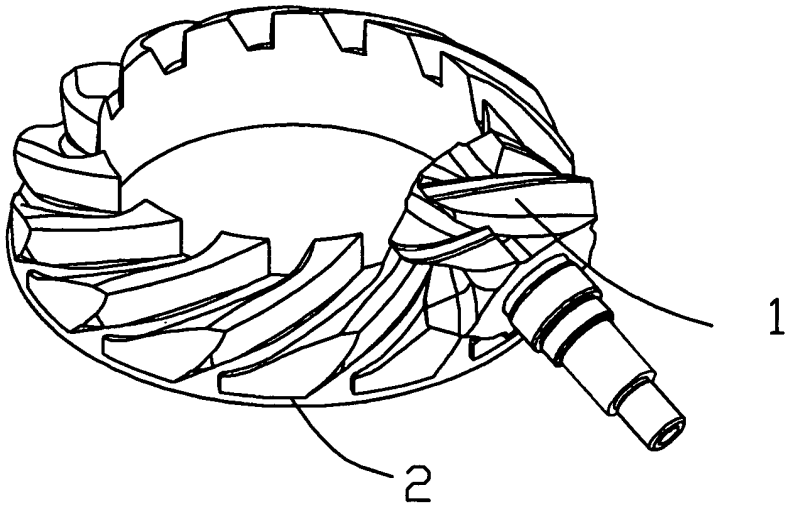

FIG 8

DRIVE AXLE ASSEMBLE AND DIFFERENTIAL
Inventor: Yakov Fleytman

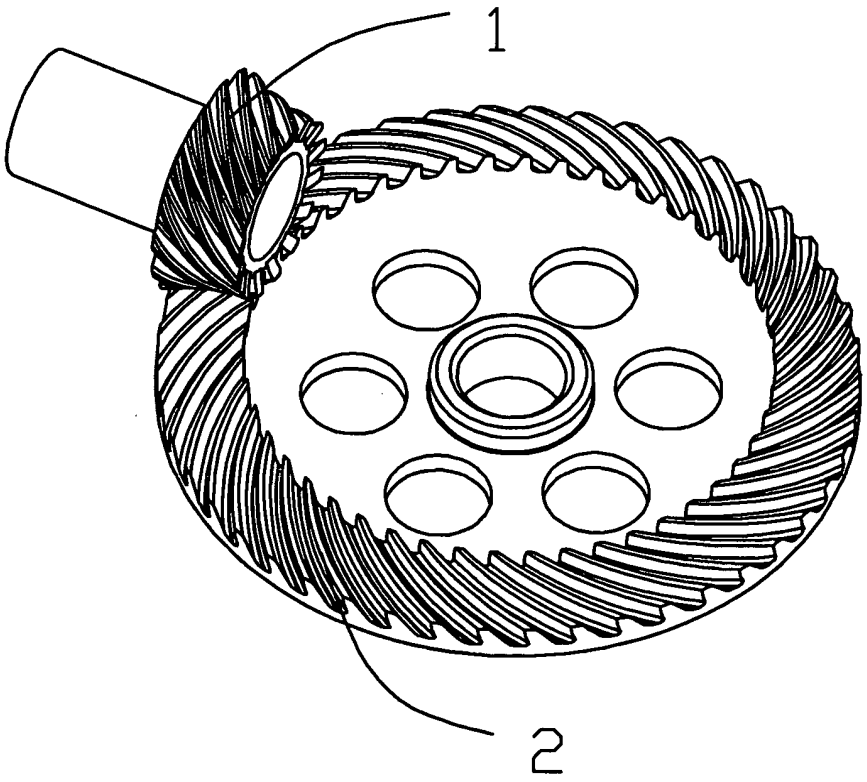

FIG 9

DRIVE AXLE ASSEMBLE AND
DIFFERENTIAL
Inventor: Yakov Fleytman

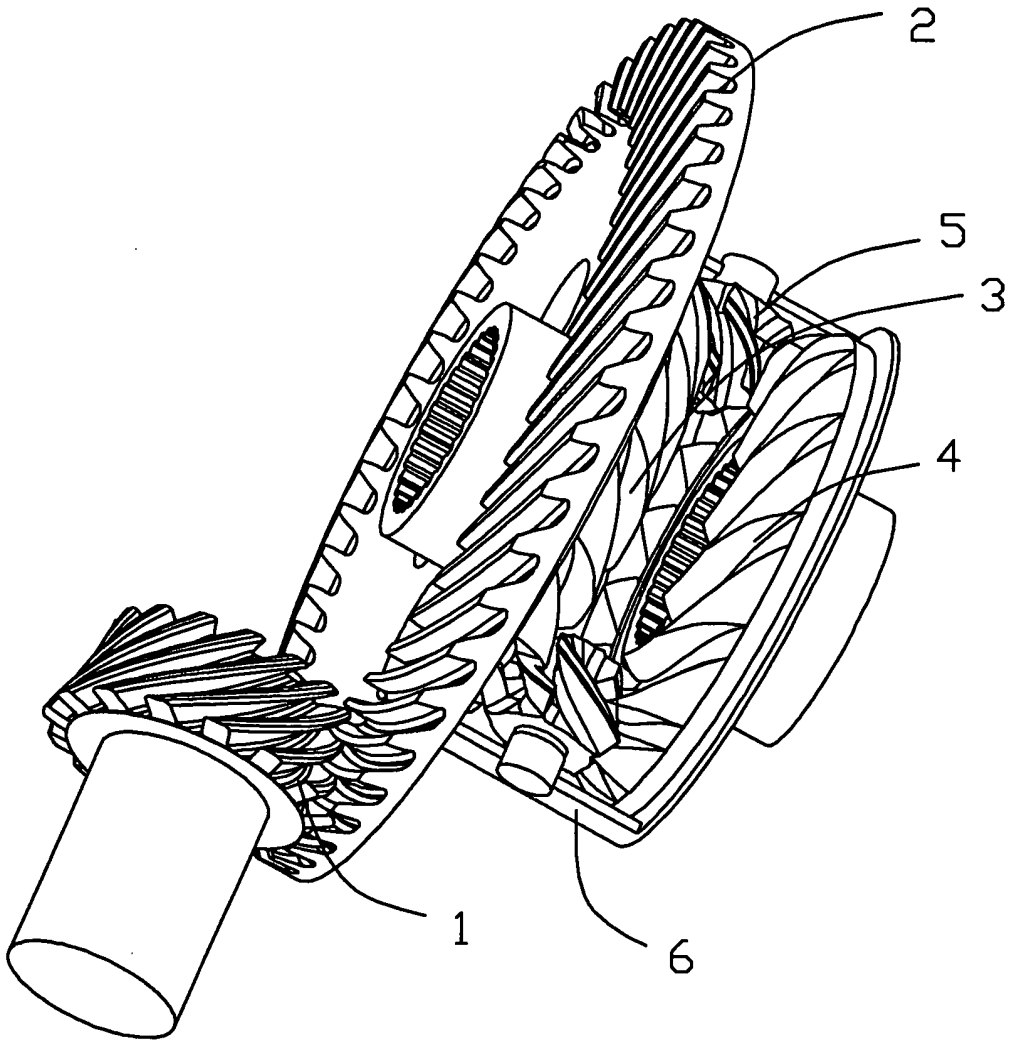

FIG 10

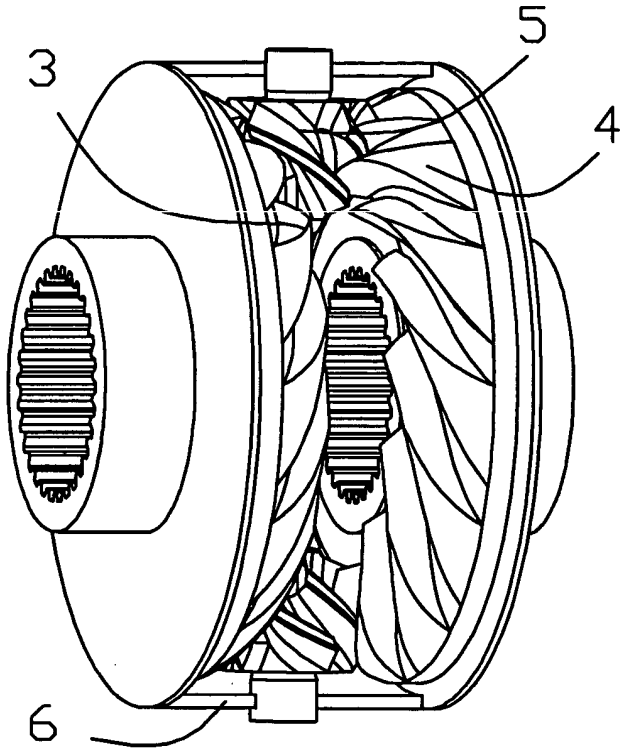

FIG 11

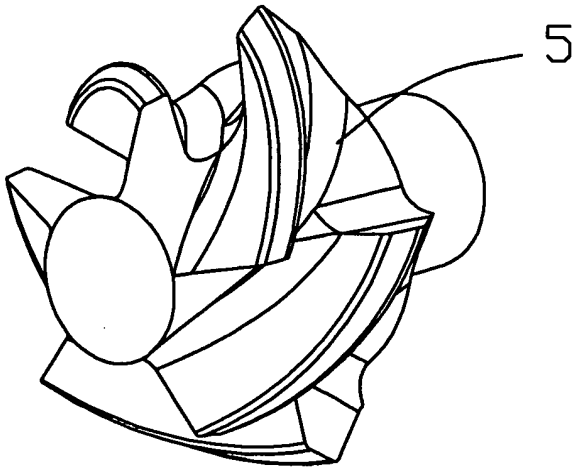

FIG 12

DRIVE AXLE ASSEMBLE AND
DIFFERENTIAL
Inventor: Yakov Fleytman

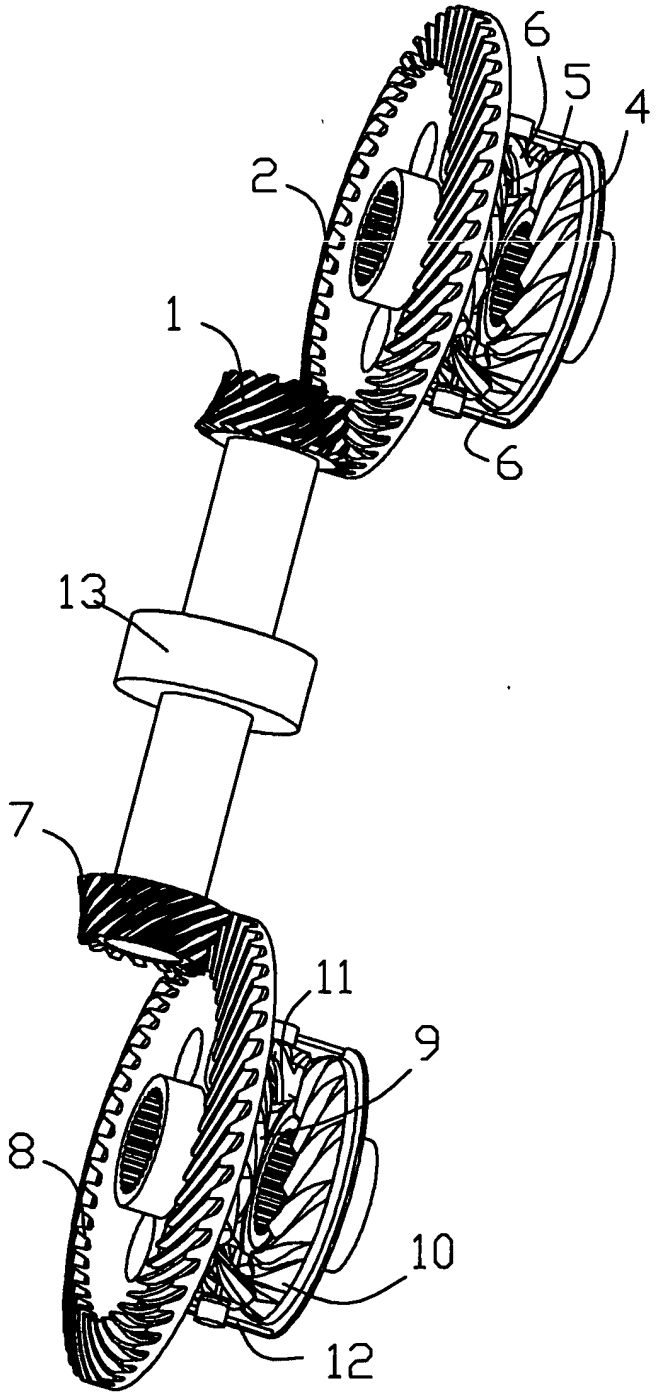

FIG 13

DRIVE AXLE ASSEMBLE AND DIFFERENTIAL

Inventor: Yakov Fleytman

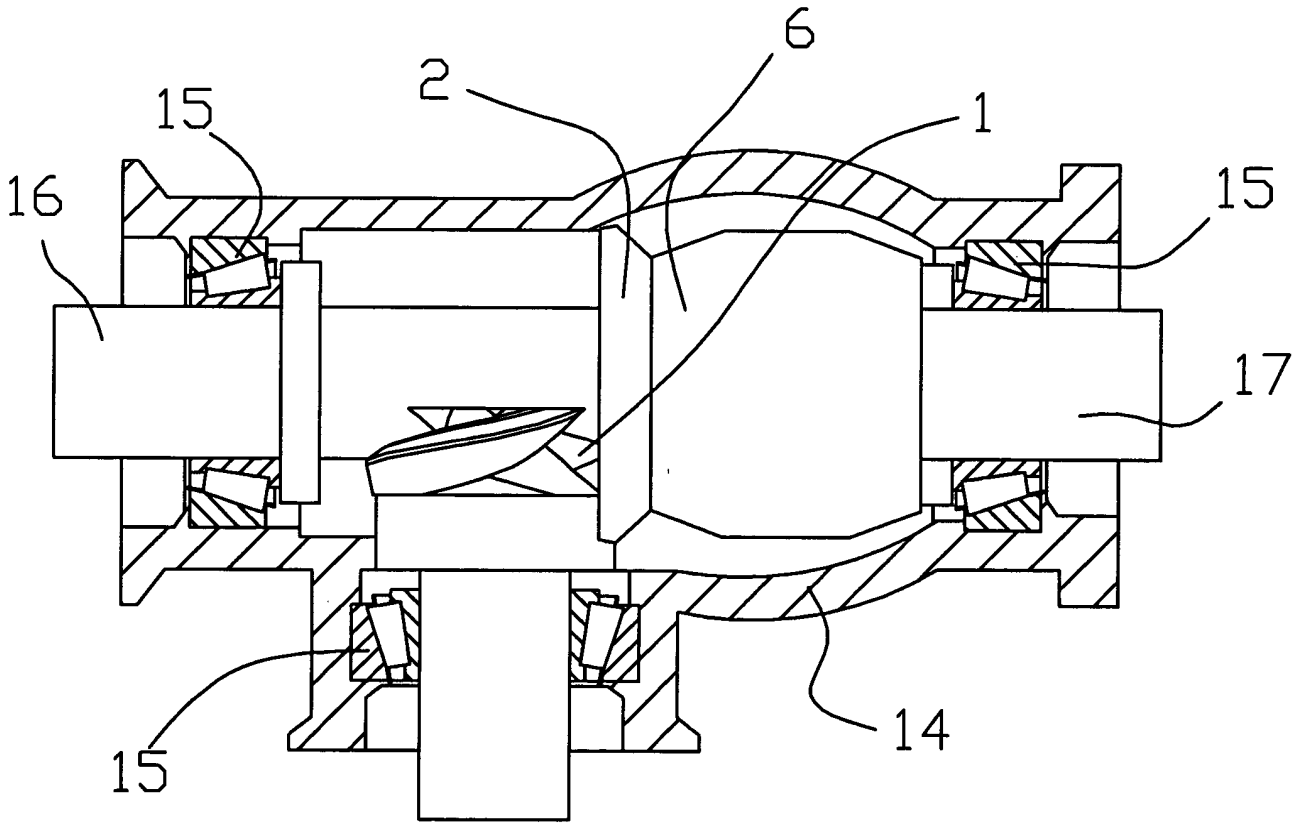

FIG 14

DRIVE AXLE ASSEMBLE AND DIFFERENTIAL
Inventor: Yakov Fleytman

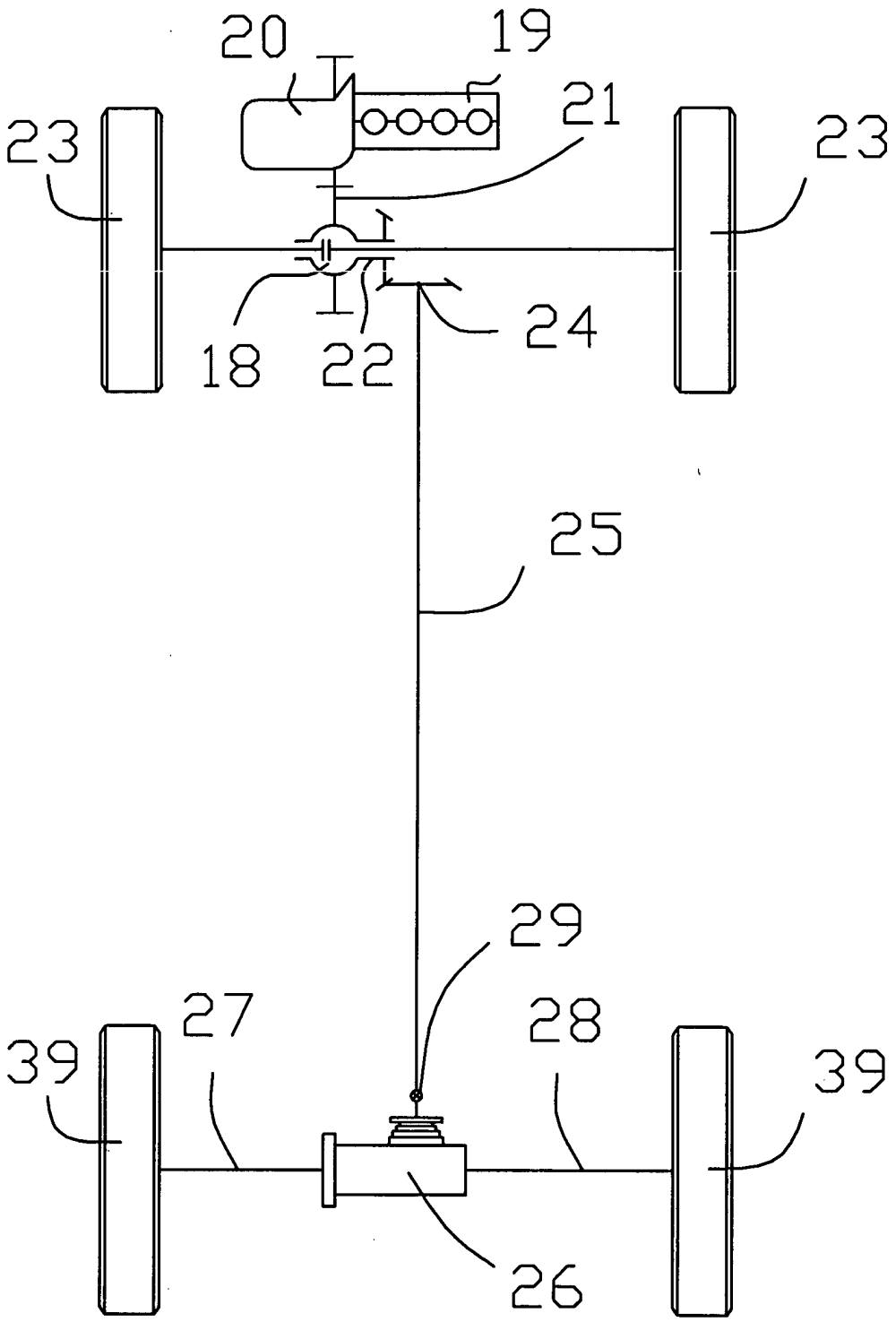

FIG 15

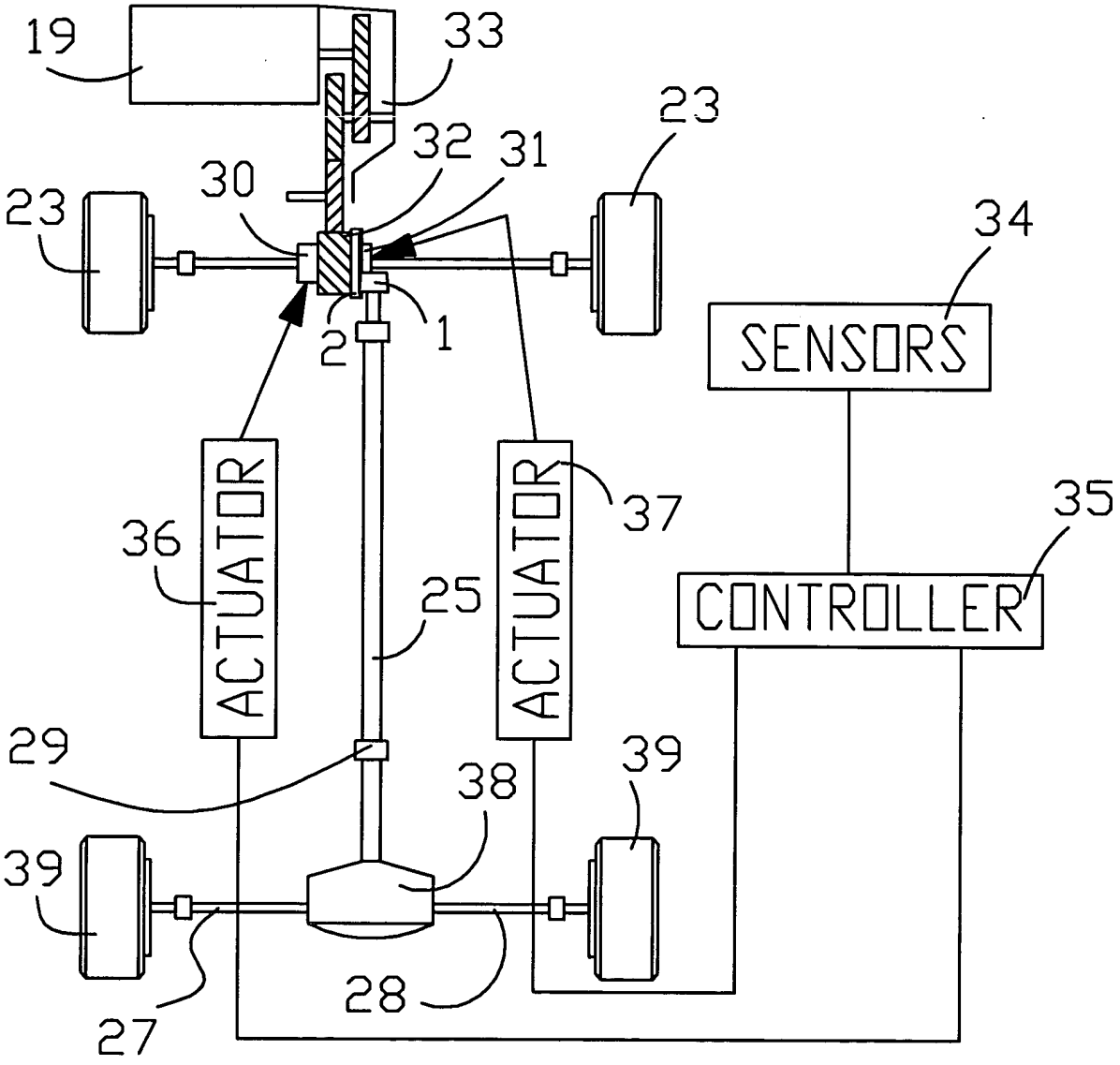
19
33
23
32
31
30
23
34
SENSORS
2
1
ACTUATOR
ACTUATOR
37
36
35
25
CONTROLLER
29
39
38
39
28
27

FIG 16

DRIVE AXLE ASSEMBLY AND DIFFERENTIAL

Inventor: Yakov Fleytman

PARAMETER	HYPOID	ENVELOPING FACE	RESULT
Area of contact	Line or point depends on tooth modification.	Surface or close to surface contact area.	Higher load carrying capacity on enveloping worm face gears.
Relative movement	Sliding and rolling. But sliding and rolling velocities are orthogonal which decreases driving efficiency.	Sliding and rolling, but rolling and sliding are collinear thus improving driving efficiency.	Higher efficiency of enveloping worm face gears even with poor lubrication.
Applying load	On the face.	On the top.	More natural pushing in enveloping worm face gears.
Contact pattern location	Variable distance from axis of rotation.	Constant distance from axis of rotation.	Better dynamic conjugacy action of enveloping worm face gears.
General design	More teeth for the ratio.	Fewer teeth for the ratio.	Reduced machining time for enveloping worm face gears.
Relative position	Radial direction of contact.	Tangential direction contact	Reduced size of enveloping worm face gears for the same load.

FIG. 17